Federal Partnership for Interoperable Communications



Overview, Interoperability Efforts, and P25

Alaska Interoperability Communications Summit

July 2006



The Federal Partnership for Interoperable Communications (FPIC) serves as a coordination body to address technical and operational activities within the federal wireless communications community

▶ Mission—

 To address federal wireless communications interoperability by fostering intergovernmental cooperation and identifying and leveraging common synergies

▶ Goals—

- Coordinate with member departments and agencies to develop recommendations from a federal perspective to appropriate advisory and regulatory bodies (e.g., SAFECOM, standards development organizations, NIST)
- Act as communicating agent to federal users about mission critical wireless communications issues and coordinate a unified federal approach to address responses
- Identify and enhance wireless communications interoperability capabilities within the Federal Government and coordinate these efforts with ongoing/existing state and local interoperability programs



To achieve the FPIC mission and goals, members will partner with other organizations, identify interoperability issues, and articulate a unified FPIC position to address responses

▶ Objectives—

- Foster partnerships among federal agencies that promote the exchange of knowledge and resources among the members;
- Lead efforts in concert with appropriate agencies in the creation and maintenance of a federal roadmap to achieve wireless communications interoperability across federal departments, bureaus, and agencies;
- Provide federal user input to organizations addressing state and local interoperability activities (e.g., Grants and Training, SAFECOM) as appropriate;
- Identify issues and articulate a unified FPIC position relative to the development of standards and specifications (e.g., Project 25 standards development);
- Identify issues and develop a unified FPIC position relative to security, standards, and spectrum that impact federal interoperability and interaction with state and local agencies; and
- Serve as the federal wireless communications community's liaison to industry, periodically obtaining technical updates and equipment reviews from vendors.

Simply stated—the FPIC allows for the implementation of priorities raised by the entire federal wireless communications community



The FPIC membership consists of 44 federal entities representing over 160 participants*

Participating Departments	Entities Within Department
Department of Justice (DOJ)	Bureau of Alcohol, Tobacco, Firearms, and Explosives Drug Enforcement Administration Federal Bureau of Investigations Federal Bureau of Prisons United States Marshals Service Wireless Management Office
Department of Homeland Security (DHS)	Customs and Border Protection Immigrations and Customs Enforcement Federal Emergency Management Administration Office of Grants & Training - Interoperable Communications Technical Assistance Program (ICTAP) Science & Technology Directorate, Office of Interoperability & Compatibility (SAFECOM) Transportation Security Administration United States Coast Guard United States Secret Service Wireless Management Office
Department of the Treasury (Treasury)	Internal Revenue Service—Criminal Investigations Treasury Inspector General for Tax Administration
Department of the Interior (DOI)	Bureau of Land Management National Park Service - United States Park Police OCIO, Telecommunications Division Office of Enforcement United States Fish and Wildlife Service
Department of Energy (DOE)	Spectrum Management Office

Participating Departments	Entities Within Department
Department of Defense (DOD)	Joint Spectrum Management Office United States Air Force - CAP National Technology Center United States Army - APM LMR - BRS Program Office - Military District of Washington United States Navy – CNI United States NORTHCOM United States Marine Corps - E-LMR Support Marine Corps Network Operations and Security Command - Navy Marine Corps Spectrum Center
Department of Commerce (Commerce)	NTIA—Institute for Telecommunication Sciences (ITS) NTIA—Office of Spectrum Management/Emergency Planning and Public Safety Division
Department of Agriculture (USDA)	Office of the CIO Office of Enforcement United States Forest Service
Other Member Departments and Agencies	
Department of Heath and Human Services (HHS) Department of State (State) Department of Transportation (DOT) Department of Veterans Affairs (VA)	Environmental Protection Agency (EPA) Federal Communications Commission (FCC) Social Security Administration United States Postal Inspection Service

^{*} State and local agencies participate as advisory members



Regular FPIC Activities

- ▶ The FPIC holds monthly meetings to brief the membership on FPIC activities, and to solicit input from the federal wireless communications community
- ▶ The FPIC has four standing committees that meet monthly to focus on—
 - Standards
 - Spectrum
 - Security
 - Interoperability
- ▶ The FPIC sponsors regional communications working groups to provide guidance within specific geographical areas
 - Charleston Communications Working Group (CCWG)



The Charleston Communications Working Group is a pilot for addressing interoperability within an identified region

- ▶ The CCWG is a regional communications working group pilot that identifies opportunities to coordinate communications projects in the Charleston (SC) area to enhance interoperability and identify possible opportunities to share and leverage common synergies and architecture
- ▶ The group, sponsored by the FPIC and the U.S. Navy, Chief Naval Installations (CNI) Office consists of Federal, state and local user agencies and coordinates state and local participation through the Office of Grants and Training and the SAFECOM Program Office
- ▶ The working group promotes and recommends approaches for interagency collaboration among Federal, state and local agencies in other regional areas as identified
- ▶ The CCWG pilot is working closely with the Office of Grants and Training and the Interoperable Communications Technical Assistance Program (ICTAP) to leverage capabilities of the Communications Asset Survey and Mapping (CASM) database tool



There is potential for federal partnerships with statewide systems

Several states are implementing VHF statewide systems which may be leveraged by federal agencies

AlaskaSouth Dakota

MontanaVirginia

New YorkWyoming

Benefits

- Built-in interoperability
- Cost savings and efficiencies
- Improved coverage
- Considerations
 - Encryption coordination and management
 - Potential FCC/NTIA frequency issues
- ▶ In coordination with federal agencies, the FPIC acts as the point of contact for its participating members



FPIC is an active participant in the P25 standards process

- ▶ The FPIC acts as the representative group of a significant segment of the federal users that has been able to provide much needed federal input into the standards development process
 - Fills one of three federal representative positions on the P25 Steering Committee
 - Sent user representatives to the Institute of Telecommunications Sciences (ITS)
 Facility in Boulder, CO, to conduct vocoder testing in partnership with
 SAFECOM
 - Successfully petitioned the P25 Steering Committee to put the Console Interface and Fixed-Station Interface on the same priority level as the Inter Sub-Systems Interface, which was at the forefront of the Standards Development efforts
 - Actively leading the P25 Compliance Assessment Process and Procedure Task Group (CAPPTG) that is developing conformance and interoperability tests for P25 standards
 - Identified interoperability issues and recommended improvements for over-theair rekeying (OTAR) and key management facilities (KMF)



FPIC supports the acceptance of P25 standard radio equipment

Definition: P25 is a collection of documents standardizing common interfaces between equipment in an LMR system

- ▶ P25 is the <u>only</u> user-defined set of standards in the United States for LMR systems
- ▶ P25 is the result of an unprecedented partnership between industry and the public safety user community
- ▶ Many federal agencies (e.g., DHS, DOD, DOI, DOJ) have adopted P25 standards and are procuring standards based equipment



Moving forward, public safety agencies will continue to adopt the P25 standard for its many advantages

▶ P25 standards provide—

- Compatibility between equipment from different manufacturers with older legacy systems
- Enhanced interoperable radios that support mutual-aid channels and roaming
- Dynamic system growth or contraction for trunked and conventional systems
- A more spectrally efficient system that can support more users in the same amount of spectrum
- Continued availability of direct unit-to-unit communications



P25 Interoperability Challenges from the Federal Perspective

- ▶ Multiple Infrastructures need to work with Multiple Subscriber Units
- Manufacturers' Infrastructure for trunked systems that are currently available include—
 - EF Johnson
 - M/A-COM
 - Motorola
- ▶ Multiple Manufacturers' Subscriber Units are available such as—
 - EF JohnsonMotorola
 - ICOM Relm
 - KenwoodThales
 - M/A-COM
- ▶ The inter-vendor interoperability issue is compounded by different or misinterpretation of standards



There has been action taken to address P25 interoperability issues observed in the field

- ▶ Small, hosted manufacturers' group (i.e., Hosted Manufacturers Interoperability Board) was formed to identify and address interoperability issues
 - The HMIB identified 16 interoperability issues and are working to resolve
 - A new "TR-8.XX" Subcommittee will be formed to address these issues in a more open and formal process
- ▶ CAPPTG identifies issues for conformance, performance, and interoperability tests and develops recommended solutions for processes and procedures
 - Acting as a liaison between the user community and the manufacturers' group to resolve P25 interoperability issues
 - Partnering with ITS to reach out to the user community and conduct interoperability tests earlier in the implementation process
- ▶ FPIC identified encryption/OTAR issues including—
 - Mobile registration
 - KMF networking



P25 Compliance Assessment Program

- ▶ National Institute of Standards & Technology/Office of Law Enforcement Standards (NIST/OLES) and ITS were tasked by the P25 Steering Committee to establish a joint government/industry group
- ▶ The Compliance Assessment Program is—
 - Voluntary—Manufacturers can still sell products without participating in the program
 - Cooperative—Manufacturers' expertise is coupled with independent observation
 - Not a regulatory or certification program
 - Not the end-all, be-all solution (but it's a critical first step)



P25 Compliance Assessment Program (continued)

- ▶ User confidence in the Compliance Assessment Program will be assured by a blend of—
 - Accredited laboratories
 - Qualified facilities
 - Independent test witnesses
- ▶ The Department of the Interior's Technical Service Center (TSC) is tentatively identified for conventional testing, pending—
 - NIST accreditation as a certified testing laboratory
- ▶ Ultimately the market will determine the final blend of approaches



Closing

- ▶ Encourage participation by local and state agencies in the FPIC activities
- ▶ Encourage participation in FPIC standing committees—Security, Spectrum, Standards, and Interoperability as appropriate
- ▶ Encourage federal users to establish a dialogue with the FPIC to identify concerns



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